DEC. 1915

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MONTHLY
MAGAZINE
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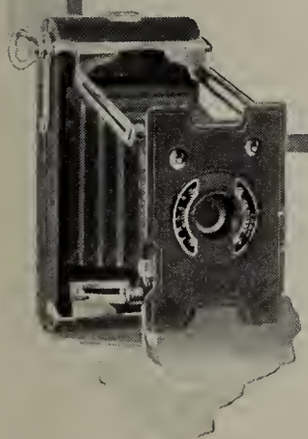

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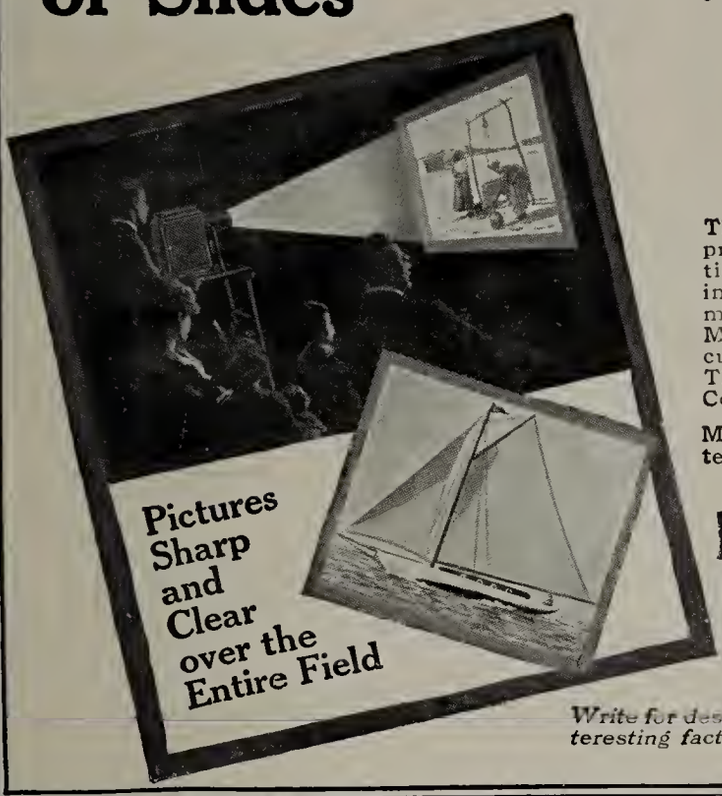

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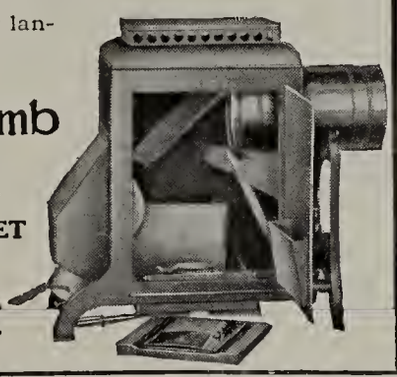

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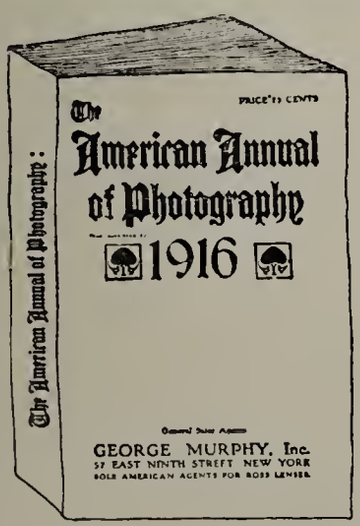

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Edited by W. I. LINCOLN ADAMS WILSON I. ADAMS, Associate Editor

THE PHOTOGRAPHIC TIMES PUBLISHING ASSOCIATION
135 West 14th Street, New York

GEORGE B. CARTER, President
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Volume XLVII DECEMBER, 1915 No. 12

CONTENTS

SUBSCRIPTION RATES one dollar and fifty cents a year, payable in advance. Foreign Postage 50 Cents, Canadian Postage 25 Cents. Single copies 15 cents. Subscriptions to the *Photographic Times* received by all dealers in photographic materials in this and foreign countries, also the American News Co. and all its branches.

POSTAGE IS PREPAID by the publishers for all subscriptions in the United States, Hawaiian Islands, Philippine Islands, Guam, Porto Rico, Tutuila, Samoa, Shanghai, Canal Zone, Cuba, and Mexico. For all other countries in Postal Union, except Canada, add fifty cents for Postage. Canadian postage 25 cents.

CHANGE OF ADDRESS.—When a change of address is ordered, both the new and the old addresses must be given. The notice should be sent one week before the change is to take effect.

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HOW TO REMIT.—Remittances should be sent by Draft on New York, Express Order, or Money Order, payable to order of *The Photographic Times Publishing Association*. Cash should be sent in Registered letter.

CONTRIBUTIONS.—All literary contributions, correspondence, "Queries," etc., should be addressed to *The Editor;* all advertising matter to the Advertising Manager.

LETTERS should be addressed:

THE PHOTOGRAPHIC TIMES PUBLISHING ASSOCIATION,
135 West 14th Street, New York.

Entered as second-class matter January 17, 1905, at the Post Office at New York, N. Y., under the Act of Congress of March 3, 1879

THE PATH ACROSS THE FIELDS — *Wm. Ludlam, Jr.*

THE
PHOTOGRAPHIC TIMES
WITH WHICH IS COMBINED
THE AMERICAN PHOTOGRAPHER AND ANTHONY'S PHOTOGRAPHIC BULLETIN

VOLUME XLVII DECEMBER, 1915 NUMBER 12

WINTER AND THE HAND CAMERA

BY WM. LUDLAM, JR.

THE first and most necessary requirement for successful winter photography is snow. Unfortunately, for me, I live in a portion of the state where real snow is beginning to be a curiosity and, instead of taking a milk-stick to measure the average snowfall, we now use a micrometer. In my younger days, I remember, we had snow on the ground continuously from early November until late March; but now it is "rain, rain, come again," and then some. Our Thanksgiving turkey was always served in blizzard weather, and Saint Patrick never thought of parading without hip-boots. To picture winter landscapes, when the genuine article only exists in memory is, to say the least, trying; but once in a great while the North Wind blows long enough to favor us with a sample of snow and then, before Old Sol can undo the work of the wind, I make a hasty grab for my camera and set forth, as my Hibernian friend has it, "to photo phalling phlakes."

The principal theme for discourse, on which all experts in winter photography agree, is exposure, and they are right, exposure is the "meat" of the proposition; exposure both negatively and positively. By "negatively," I refer to the part that the camera takes in the transaction; by "positively," I mean the effect that the "exposure" has on the individual, if not properly clothed to weather the winter blasts. I know, from experience, that a good "negative" is often purchased at the price of a bad, "positive" cold, the one developing along with the other, and the negative is, by far, the easiest of the two to "fix."

Care in "exposure," then, is the essential thing to look out for in winter landscape photography. Give full-time for the shadows, let the highlights take care of themselves, (the poor things have been taking care of themselves for such a long time that they are well able to do so,) take time to bundle up warmly and that possible "positive" cold will not materialize.

Plates should be double-coated and orthochromatic in order to successfully capture the delicate detail of

A GRAY DAY *Wm. Ludlam, Jr.*

snow lights and shadows; the body should also be double-coated to make it anti-rheumatic and cold proof.

A ray-filter is also necessary to realize in the full the advantages of the orthochromatic plate. Most snow pictures are "chalk and charcoal" owing to the general misunderstanding of the importance of this fact.

Development of a winter cold requires no special attention, it will take care of itself by the factorial system, just so many days to each stage of the complaint, its violence only modified by proper care and dosing. Development of a winter negative does require special attention and must be stopped at just the right moment, before the high-lights begin to choke up, to insure good results. A soft working developer, with plenty of water, to give time for the shadow detail to build up, is what is required, preferably pyro. Snow, although white, is still alive with delicate little gradations of shadowy detail, and it is the preservation of this quality in the negative that really makes the picture. A print representing a bank of pure, white snow is untrue to nature; a dainty touch of high-light, here and there, on a field of darker tone is far more effective.

The correct paper for printing depends entirely on the degree of contrast and density in the negative. I prefer a strong negative used in combination with a soft grade of paper of fairly rough surface; though some writers advise a normal grade of paper to retain brilliancy. This is largely a matter of personal taste and depends upon the individual. In my experience sparkling snow in the print means black shadows, and to overcome this I sacrifice some of the brilliancy in the

ALONG THE WALK *Wm. Ludlam, Jr.*

high-lights. To my mind the resulting prints are truer to nature by giving, in the full, the effect of soft snow texture. If the prints seem too dark in tone they can be lightened up wonderfully by double-mounting on gray cards with a narrow line of black around the edge of the print. Effective high-lights may be added by deft touches with a marking pencil on the reverse side of the negative.

To lay all joking aside, both "negatively" and "positively," there is nothing more exhilarating than a tramp through the snow on a clear, crisp winter day. Everything radiates life; the air is full of it, the sunshine sparkles with it, and even the shadows respond to its vitality. It is then, if ever, that the joy of living strikes deep in its fullness. Step out with a full stride; expand the chest and breathe in the magic of the winter atmosphere; swing along the beaten path; through unplowed drifts; across buried fields; through the frosted tangle of the forest and live, live as you have never lived before. Who could not, in this atmosphere of "frozen dainties," appreciate the "picture possibilities" of winter? Perfect bodily enjoyment breeds a contented mind and, as the mind sees, the hand executes. It is only too true that a "turned liver" makes everything appear "as through a glass darkly;" but no self-respecting liver can withstand the spell of "winter's wiles" and must, perforce, stand upright in its proper place.

If you happily live where winter means real snow, and plenty of it, don't stand watching it through tightly closed windows; but load up your camera, bundle up your body and get out in the open. Plough through the drifts and—live.

MORNING SHADOWS *Wm. Ludlam, Jr.*

Figure V

PHOTOGRAPHY AT NIGHT

BY C. H. CLAUDY

LIKE many other titles for photographic stories, this is more or less of a misnomer. For flashlights indoors after sundown are as truly examples of the practice of photography at night as are those exposures made outdoors with what illumination nature or the city government has supplied. Nevertheless, by "night photography" most amateurs understand the making of pictures of lighted buildings, city streets, etc., after dark, so the title may express its meaning in spite of its looseness.

The qualifications which fit a photographer for night work are mental rather than instrumental—almost any equipment may be used for this curious department of photographic work. But unless the experimentor is able to "see" a night effect, he is almost certain to be doomed to disappointment. Hence it is that many experiment, but few make night work a hobby. Those few who do, manage to produce some exquisite pictures, well worth the time and trouble which is required to obtain them.

Night photography imposes some limitations, chief of which is that of lengthy exposure, so that practically all night work, save that accomplished by flash, is upon still life. It is paradoxical that street scenes may be made at night when full of people, and even more so that the people will have disappeared from the result, but that is a detail.

Lenses and plates or films—the former more than the latter—interpose their own limitations to the efforts of the night photographer. The more complicated the lens structure, and the wider its angle, as a general

Figure I

rule, the more apt is the resulting picture made at night to show flare, ghost, or degradation due to internal reflections. The ideal lens for night work, as for day, would be a simple, single glass. It is, however, rare that it may be employed on account of the necessity of great stopping down to eliminate distortion, and the consequence of too great a lengthening of an already long exposure.

Plates are very apt to produce curious halation effects upon subjects which have brilliant spots of light such as arc lamps, within their composition —films are less likely to produce these effects on account of their thinness. On the other hand, the round halo, and sometimes accompanying reversal, which frequently mark the presence of an arc light, have become conventional representations of brilliancy, and are not always objectionable. See Figure One, a beautiful example of photography at night by Mr. H. J. Cowling, who has here exemplified in practice about every principle which the photographic worker at night should observe. Further reference will be made to this example.

The photographic worker at night must make up his mind at once that his effects are to be those of contrast, of brilliancy, of mass against mass, rather than of fine detail. He must also make up his mind to patience, and to some disappointments. A photograph such as that shown in Figure Two, is of course, a true night picture, yet it is not one which gives any great satisfaction to the beholder. The outlines of the building are plain

enough and we gather that there was water between camera and building. But the exposure was too short, the development too sudden, the printing too harsh, to bring out any corroborative detail. And while mass against mass, and contrast of light against shade are the essentials of a night picture, *some* detail in shadows, *some* suggestion of perspective, is an absolute essential if reality is to be simulated at all. We do not get this feeling of reality in looking at Figure Two—it isn't there. Standing on the bank of that lake, pool or river, and looking at that brilliantly lighted building, our eyes would see some details of foreground, and our brain register some feeling of perspective. And when a photograph fails to convey to the mind what the eyes would see in the same place at the same time, it is not a good photograph.

Mr. Cowling's beautiful effort, on the contrary, *looks* like a night scene. It strikes our eyes as perfectly natural. We have that detail underfoot and close at hand—dim, obscured, soft almost to fuzziness, to be sure, but still there—which puts us at once in a public park at night and not marooned twixt earth and sky in the middle of a sea of darkness, without either perspective or standpoint.

The man who made Figure Two may be inclined to disagree with this and say that because Mr. Cowling had snow, therefore he should get no credit for detail in the foreground and a retreating perspective due to that detail. Let him, then, examine Figure Three, in which everything has been sacrificed to brilliancy. Here, too, is snow, and a suggestion of detail in the foreground, but badly handled. True, the picture will please, compared to Figure Two, but when placed beside Figure One, there is no comparison. With similar opportunities, the two photographers who made One and

Figure II

Three show the difference between the right and wrong way.

It may interest those who propose to attempt to duplicate Figure One at the first opportunity that it was made with an exposure of *eighty* minutes, lens at F 11. Figure Three was given eleven minutes at F 6.8.

I do not know the exposure of Figure Two, but I should guess about five minutes at F 8.—many times too little.

Figure IV

Even with a brilliant light close at hand, a long exposure is indicated. In Figure Four, for instance, of the Christmas Tree for the public, there is too little exposure. True, the lights on the tree are brilliant enough—too brilliant. But there is a lack of that detail which in the scene itself must have been plainly visible in that light. Hence the result is unnatural.

It can, then, be confidently stated as a principle of night photography out of doors, that lengthy exposure is a necessity, and that the exposure should be calculated, not upon the source of the light and its brilliancy but upon the

Figure VI

reflecting power of the foreground and the time it will require to register on the plate. Then development must be so accomplished that the maximum of softness and delicacy be attained. For even with that maximum the negative is going to show violent contrasts, and too much contrast at night produces just that feeling of unreality the competent photographer will endeavor to avoid.

It is occasionally possible to get a combination exposure of daylight and night-light. It is not always desirable. But in such a case as Figure Five, the result justifies the means. Here a short exposure has been given just before sundown. The patient photog-

Figure III

rapher leaving his camera untouched, waits for night and the city illumination, after which he gives an exposure of two or three minutes to get the tiny dots of light for which he has waited. The result is a very lifelike little picture of the city across the river, and here, be it noted, the black foreground is not at all unnatural, since in nature that absolutely unlighted foreground would actually appear dark to blackness.

Unquestionably the greatest factor of pure beauty in any example of night photography is the quality of mystery. Without attempting to go into the realm of psychology, it is nevertheless a fact that all our feeling for the beauty of night, and of night scenes, is predicated upon this factor of the mysterious, the unknown, the veiled. Hence the maker of any night picture will do well to chose a viewpoint and a subject which has this element of mystery about it, rather than one which ends in utter frankness and self-explanation. Again reference is made to Figure One, where all is plainly visible in the foreground, but where the lights in the distance attract the eye, which wanders back under the trees towards something as yet not seen—something—what? There you are! The mystery of the night—and the picture is attractive. Much less pictorial, even if as good photographically, would Figure Three be, because its feeling of mystery is so much less pronounced.

It is probably from an association with the mysterious that lightning photographs make such a vivid appeal to the beholder. Figure Six is a good

example. Such pictures are to be made by any one who can get a camera and a thunderstorm at the same time, merely by holding the camera in the hands, pointing at the sky, having the shutter open and waiting for the flash. Of course, such brilliant examples as Figure Six do not always reward the experimentor, but it will be a poor thunderstorm indeed which does not give some interesting results.

The photographer who ventures forth at night with his camera, then, should remember that a long exposure is usually better than a short one—that a simple lens and a film will produce generally better results than one of complex structure and an unbacked plate,—that the quality of mystery, secured by not having the greatest illumination visible in large size at the end of the vista, is the most potent lure of the work, and that while contrast and vividness make up most night pictures, a certain amount of shadow detail is an absolute necessity if the picture is to be at all natural.

Making a picture according to these suggestions will keep almost any beginner busy for a while. But when such work palls, there is still lightning; yes, and celestial photography, making star circle exposures, long focus lens pictures of the moon and subsequent enlargements—in fact a great many ramifications of night photography, all attractive and all "different." Agreed, that in its tantalizingness, it is something like following a will-o'-the-wisp, yet, like that interesting pursuit, there is always the promised pot of gold if you locate his home, and if you "locate" a first class night picture, there is, if not gold, at least more satisfaction than could easily be packed in any pot! You have only to try, and to succeed, to agree.

A FRIENDLY CHAT WITH AMATEURS

BY AN OLD AMATEUR

THERE has recently been much unnecessary discussion concerning the relation of photography to art. Some have tried to lower it to the position of mere handicraft, but these are generally self-styled artists who cannot rise even to a medium place in their own profession. But whether photography be an art or only a trade, one thing is certain, to produce a beautiful picture, one full of effect and feeling, demands a considerable degree of artistic taste on the part of the operator. To direct the camera to any object or scene in nature and expect, from accuracy of focusing, or even from proper timing and after-development, a pleasing or satisfactory picture, is simply absurd. Good taste is synonymous with good judgment, and it is in reality the judgment which exercises the power of selection from nature of that which is beautiful and chaste.

The operator should have constantly in view the effect to be produced, not by any one portion of the picture he sees upon the ground glass of his ca-

"OPINIONS" *R. R. Sallows*

mera, but from the general effect of the whole. He should strive to have the different parts of the picture harmonize, and not let any object be too obtrusive, either from its unsightliness or prominence, even though it be pleasing in itself. Such objects attract the eye the first and hurt the general effect.

The operator should remember that a foreground is as necessary to the picture as a middle-ground or distance; but he should likewise remember not to overload it with too many objects, nor yet to make it so bare as to destroy the balance of the picture. It may sometimes happen that a scene in every respect beautiful, is marred by some unsightly object in the foreground; if it is possible by changing slightly the point of view to escape the annoyance, do so; but if this cannot be done, seek either to remove the object directly or hide it by some device; as, for instance, cover it with branches and leaves or seat figures upon it if possible. Indeed, it is often necessary to place figures in the foreground, but here the exercise of the judgment is especially demanded and their treatment more difficult than inanimate objects which may be disposed of at will. It is generally best to have the figures in attitudes representing some action or work; it gives animation to the scene. Sometimes, however, repose will heighten the beauty of the view. Above all, remember never to let the figures stare at the camera. Let them always have the appearance of forming an essential part of the scene represented. Try to get the picture as sharp as possible.

In focussing, if you find it impossible to get both the distance and the foreground sharp even by the use of the swing-back, then divide the focus, giving the preference always to the foreground and its immediate vicinity. A want of definition on the foreground is always more noticeable than in the distance. Let it be remembered that this is the case with our own vision, and a photographic picture can never err artistically if it translates the scene as it appears to our eyes.

Attention to detail is absolutely necessary; nothing effective can be done carelessly. It is better to take a single picture, and to make several exposures upon it, than to flash off a great number of worthless, unartistic, undertimed, and flat negatives, not worth the pains of development. It is a great satisfaction on development to watch a well-timed and nicely arranged picture emerge step by step from beneath the developer.

Carelessness or over-excitement in the exposure of the plates is the principal cause why many beginners forsake photography in discouragement at their failures, when, with the exercise of a little care and patience at first, they might avoid them and soon reach that stage when the art becomes a healthful pursuit and a delightful recreation.

The main points demanded by a good photographic landscape are perfection of definition, brilliancy and softness combined with vigor. There are certain conditions upon which success in these particulars is alone obtainable:

First. Proper Illumination.—Always choose a clear, quiet day for outdoor work. Avoid making an expo-

GOING HOME *Jared Gardner*

sure when the foliage is moved even by a gentle breeze. A movement is always more perceptible with a short exposure than when more time is given to the negative. A bright, sunny day is best for large views, because in them more contrast in light and shade is demanded. Hence, in such views never expose with the sun in front or behind the camera; let it light up the foliage from one side or the other, so that the shadows thus produced may break it up and nicely gradate it. A flat picture is always unsatisfactory because it is unartistic. In stereoscopic views a modification of the above principles is required. They require great softness and perfection of detail with brilliancy, and above all great sharpness and clearness; the contrasts need not be as decided as in single views. These points are necessary because the stereoscope enlarges the pictures, and any want of detail or great contrast would be more noticeable.

Second. Direction of Light.—The light falling upon the view should be so distributed as not to give an undue portion of light or shade. The subject should not be equally lighted all over, nor should it be all in shadow. There are, however, some exceptions to this rule, certain objects are taken best in a soft, subdued light when the sun is not shining brightly, or at all, as deep ravines or gorges with overhanging cliffs, or broad, flat surfaces of water with the sun in front. The reflection upon such surfaces would, in the picture, cause only a dead-white impression, without any of the characteristic features of water, resembling mere banks of snow.

Clouds are not easy things to paint, neither are they easy things to photograph. Yet I think the photographer has so far even exceeded the best painters in the production of cloud scenery. Look, for instance, at a well-developed cumulus. Where have you seen it accurately represented by the brush? Who ever really painted those delicate, long, filmy clouds known as mares' tails, with gentle curves floating upon the bosom of the air. At least, no artist has ever given them with the accuracy and delicacy of gradations of the photographs of some of our masters in landscape photography. The sky with clouds is a material part of the composition of a landscape. It is the keynote interpreting the whole scene. The photographer should never rest satisfied with smutty dull skies, trusting to his steady hand to block them out of the negative with the opaque. Such devices are bad, and the picture is generally spoiled to any one of artistic feeling.

There are better plans by which clouds may be secured in the landscape. Yes, even the "lazy pacing clouds" are too quick for the rest of the landscape. If the plate be exposed with the hope of securing the sky and the landscape at the same time, certain devices must be made use of. The sky requires only about one-third the time of the foliage; and if the proper time is given to the latter, the former will be over-done and too dense, and without gradations of half tones.

It is for this reason that most operators employ the flap in front hinged from the top of the lens, which, by shading the sky, prevents it from being over-timed. Care must be taken to

THE HIRED MAN *Jared Gardner*

keep the flap in gentle motion, otherwise a rigid, distinct line will be formed on the plate. It is also necessary to gauge the distance through which it moves by the extent of sky surface required in the picture.

The artistic quality of the picture also depends upon the proper rendering of the foliage. Nothing can be so unsightly in a picture as a dense mass of foliage, without any detail or half tones. It offends the artistic eye, and will ruin a view, no matter how beautifully rendered may be the sky or the rest of the picture. Indeed, there are certain devices by which badly taken skies may be remedied, but there is no cure for ill-defined and flat foliage. To secure good results with foliage, a perfect calmness of the atmosphere is demanded; the wind must be still. A scene such as Keats describes would make a beautiful photograph:

"No stir of the air was there;
Not so much life as on a summer's day
Robs not one light seed from the feather'd grass,
But where the dead leaf fell there did it rest."

The slightest motion of foliage in the foreground produces a blurred and indistinct mass in the front of the picture, which detracts from it, if it does not totally mar, the whole picture. Always wait for the calm which follows the gust of wind.

Patience is one of the virtues which the photographer should have in preeminence; and patience shall have her perfect work. Its reward shall be the beautiful negative which shall result from the favorable combination of circumstances. Always be ready to seize the favorable moment. Have everything in readiness to make the exposure, and cease the instant the wind gives his gentlest premonition that he intends again to rollick with the sportive leaves.

The presence of the sun is essential in securing good results with foliage; it should never be taken when entirely in shadow. A landscape—especially one of any extent—is always flat and low in tone when not illuminated by the sun. There must be relief and contrast, which can only be secured by aid of the sunlight—not necessarily in its full strength, but at least in sufficient quantity to give the relief, and to break up the lights and shades. Often when the sun is behind a light mass of clouds the best results are effected, and the time of exposure lessened. The photographer should not forget that shadow, as well as light, is demanded by an artistic view. Do not try to get all the light possible upon the scene by working with the sun behind the camera. Some subjects demand the admission of the light from the side. It is not enough to secure a just balance for the sky and ground in a picture.

The proper rendering of still water in the photograph demands the greatest attention. Nothing is easier than to give it the appearance of a flat, level bed of chalk; but to get the real look of water, with beautiful reflections, showing it to be mobile, transparent fluid, requires special management of the light. Too great a flood of light upon the surface often results in giving such density that all reflection is destroyed, especially if the sun is in front of you. A light, cloudy day will generally be found to give the best results.

When it is desired to photograph water in motion, as in a waterfall, or in the gentle ripling of the stream, resources should always be had to the instantaneous drop and to rapid plates. Otherwise the rendering of motion will be destroyed, and only the appearance of wool result.

Third. Length of Exposure.—The estimation of the length of time a plate should be exposed seems to demand a sort of intuition on the part of the operator. He must be able to judge exactly; otherwise the negative will be either under-timed or over-exposed. It demands, first of all, a thorough acquaintance with the apparatus, which can best be learned by trial. Some lenses are more rapid in working than others, and hence require less time to produce the same result. It is best, on general principles, for the beginner to confine himself to the use of a plate of known rapidity, and not to jump from one brand to another. Certain data will thus be obtained, which will be of service to him in judging of proper timing.

It is not always possible, or even desirable, to use the same lens. Sometimes a long-focus lens is demanded, for very distant views; sometimes a short focus is needed, where the view is limited in extent. The length of focus may be doubled by taking out the back combination, if the lens is a double one. When this is done, longer time should, of course, be given to the plate.

On general principles, it is best to use a lens of moderate focal length, rather inclining to long focus than to short. A short-focus lens should be used with caution, because it is very apt to exaggerate the foreground, to distort any very near objects, and also to dwarf the distance.

On the Use of Stops and Diaphragms.—It is best also to confine one's self in the beginning to the use of one or two stops, until a thorough acquaintance with its capabilities is acquired. It is best first to use the largest stop, which will give good definitions, except when very rapid plates are made use of, when a small stop should be employed, otherwise there would be an over-exposure.

Avoid Under-exposure.—An over-timed plate, by skillful development, may be corrected; but no doctoring can cure an under-timed negative.

In making your exposures always time for the shadows; let the high lights take care of themselves. If this is not considered the picture will be harsh and chalky, without detail, and very annoying to the artistic eye.

There is an old saying, "A good workman can work with poor tools," which, though true in the main, is liable to misinterpretation. Experience teaches that good workmen always, when possible, make use of the best tools for their peculiar work. The skill they have acquired is the resultant of the habit which has been gained by the constant handling of the best apparatus, and when necessity demands it they can, it is true, accomplish better work with poor tools than less skilled artisans, but, from the nature of things, it can be done only with a greater outlay of energy.

The desire which some persons have of courting difficulties, of enticing obstructions, in their way, is not always praiseworthy, and sometimes it be-

tokens only a pugnacious disposition. Why should we climb over hills or jump precipices when we might reach our goal more surely, and at the same time more comfortably, by keeping along the even road which art and science have levelled for us?

We have frequently heard the boast, "This view was taken with the clumsiest and most ungainly apparatus, but see with what good results considering the circumstances." To those who delight to carry the donkey on their own shoulders instead of letting the donkey carry them over the brook, we have nothing to say by way of advice in the selection of their apparatus, but leave them to their thoughtful cogitations over cigar-box cameras and pin-hole lenses.

To those who wish to produce artistic work and not feats of legerdemain the few remarks which follow, we hope, may be of service.

The first thing to which the amateur should give his special attention is the camera-box. Let it be light, but well made; perfect in workmanship and beautiful in polish. Perhaps the advice of Polonius to his son might be safely followed here—

"Costly thy *camera* as thy purse can buy,
But not expressed in fancy; rich, not gaudy."

For the camera oft proclaims the operator.

When short trips are taken it is best to have a number of extra plate-holders. By filling them in your dark-room at home you can start out with your mind free, but if a long excursion is contemplated, it may be necessary to provide a changing-bag, which may be had of any dealer.

It is well to have a number of different fronts to your camera for the different lenses which you may find necessary to use.

Never select a camera without a swingback. Old fogyism may extol the rigid camera of our forefathers, but the progressive photographer will take care to provide himself with the best swing-back he can find. The crooked lines produced by the rigid back will make anyone possessed of an artistic eye consign his old machine to the precincts of the lumber-room. The single swing-back will, however, suffice for ordinary work. The double swing-back has its peculiar advantages, but requires more care and experience in its management to get a true focus of the image upon the ground glass. It is sometimes necessary to use it for short range when the foreground is close at hand.

The amateur, captivated with the beauty of the landscape, is sometimes inspired with the idea of producing a large picture of the scene before him, and becomes possessed with a longing for a large camera, and accordingly sells all that he has, his small 4 x 5 box included, and invests in an 8 x 10, but only to find that what was easy to accomplish with the small camera becomes almost insurmountable with the big one. It is best to keep satisfied, for some time at least, with the small box, until experience has ripened the bud of ability into the full-blown flower of perfection.

The selection of the tripod or stand which is to hold the camera-box is not to be held of small worth. The amateur too often looks more to lightness than to stability. Now while we by

no means advocate the carrying of too much luggage, there is a certain amount of stability demanded which is incompatible with too great lightness. The bed of the camera must have a solid base upon which to rest, otherwise there will be a constant vibration, which will tell wofully upon the sharpness of the view.

Perhaps there is no part of the apparatus over which the beginner expends so much thought and worry as the selection of the lens. Success in landscape, as well as in portraiture, depends in a great measure upon the proper choice and right use of the lens. Among the many forms and makes of lenses it is no wonder that the inexperienced become bewildered.

In the selection of a view lens the following points should be determined:

1st. The size of the picture.

2. The amount of the subject intended to be included.

3d. The character of the picture; that is, whether it is intended to be an architectural view or a landscape.

We have said before that on general principles it is a good plan for the beginner to confine his work to small-size plates, and we here may add that this fact should be taken into consideration in the selection of the lens. The increase in the size of the plate is always attended by an increase in the difficulties of manipulation, and an increase in the labor of transportation, and we may also add, an increase of the expenses.

Concerning the amount of view to be included in the picture, that is, what is called the angle of view, we may say it depends upon the relation to the focal length of the lens. That is, the angle will be larger with a short focus, and less with a long focus. It is a common failing with the beginner to try to get the largest angle of view possible. Now this is a mistake. If perfection of delineation is desired, or perfect truthfulness of the translation of the scene upon the ground-glass, a long-focus lens must be made use of, and hence a necessary limitation in the field. If a short-focus lens is chosen, there will be an exaggeration, often amounting to such a degree as to give an entirely false conception of the scene.

The focal length of a lens should not be less than the base line of the picture; that is, in a 4 x 5 camera it should not be less than five inches, but rather more. However, it is not well to rely wholly upon one lens to do all kinds of work. Special work demands special lenses. The same lens cannot make an instantaneous work and a copy equally as well. For architectural views a dectilinear lens is indispensable, and one of moderate angle is here also to be chosen. Above all, select a lens perfectly free from distortion and flare; these points are of more account than brilliancy of surface.

When a single combination lens is used, a certain amount of distortion will be perceptible in the lines of buildings, but this may be rendered less by keeping the line of buildings away from the extreme margins of the picture.

FREEING ALL KINDS OF SILVER PRINTS OF HYPO AND IMPROVING THE TONE

BY ALFRED J. JARMAN

IT is well known and recognized that the principal cause of photographic prints made with the silver salts is the retention of a very small quantity of hypo sulphite of soda, a hypo-sulphite of silver within the body of the paper, as well as the retention by the gelatine or other colloid coating. Many chemical substances have been tried with more or less success, but the method given here has proved to be reliable after many trials and tests extending over a year. Every print that has been put to the test and then submitted to the action of light and air, has proved to be successful, no matter what test was applied, not the faintest trace of hypo could be found. These remarks apply to developed prints, as well as to those that were printed out, either gelatine or collodion. Many times a solution of common alum has been suggested and used upon thousands of prints with the result that all prints so treated fade and almost disappear. The writer has prints in his possession that were made upon 8 x 10 gelatine printing out paper, of the fireworks explosion in Madison Square Garden, which caused terrible havoc some four years ago, every print has nearly become extinct entirely through the use of an alum bath after the fixing operation. The use of peroxide of hydrogen in a very diluted form has been suggested and used. In any case where a body approaching ozone is employed an injurious action takes place in the deposit forming the image. Long washing, or changing the prints in many changes of clean water is no doubt one of the best means of ridding the print of hypo. Photographic work carried on at high pressure as it is today, will not permit the time necessary for long washing, therefore, any means that can be safely employed to rid the prints of the principal cause of fading can but be welcomed by those who wish their prints to last. The following solutions made as directed and used accordingly may be relied upon as a good hypo eliminator, proof of this having already been given after a year's clear trial.

SOLUTION NO. 1

Hot water.....32 ozs. fluid
Acetate of lead..... 4 ozs. av.

The water in this case may be boiling, the mixture being made in a stoneware pitcher. If the acetate of lead has become very white and powdery, it must not be used, because this white powder is the carbonate of lead, which will prove that the acetate has been long exposed to the air. The crystallized acetate of lead is the right chemical to use. As soon as the solution has become quite cold pour off the clear portion from the sediment. This sediment consists of sulphate of lead principally and is thrown away as useless.

SOLUTION NO. 2

Nitrate of lead, c. p. ..... 3 ozs. av.
Hot water.....32 ozs. fluid

This salt should be dissolved in a small enamelled saucepan, the water

being brought to a boil, owing to its being comparatively insoluble in cold or warm water. When the solution is cold pour off the clear as in the case of the acetate, marking each bottle *stock solution.* As soon as the prints have been fixed, and have received a washing in plain water, four or five changes will do, allowing a little time to elapse between each change, place them into the following:

NO. 1

Water. . . . . 1 gallon
Acetate of lead solution. . . . . 2 fl. ozs.

As soon as the prints have been placed into this, turn them over and over quickly so that each print becomes bathed in the liquid; continue this operation for five minutes, then pour the liquid away, and wash the prints well for ten or fifteen minutes. Make a test for the presence of hypo by any known test. It will be found that not a trace of hypo can be found, nor lead either. The nitrate of lead No. 2 solution may be used and be just as effectual. It will be noticed that the color of the prints is improved by this treatment, although in the use of the acetate solution, there is less than one grain to the ounce of water, while in the stock solution the strength is fifty-five grains to the ounce. As soon as the prints are placed into the mixture and turned over, a slight milkiness will make its appearance. This will prove to be of no consequence. This is caused by the formation of sulphate of lead owing to the presence of a small quantity of hyposulphite of soda becoming decomposed. It is during the formation of this sulphate of lead that the reaction takes place freeing the print of the hypo. In every case the lead mixture must be thrown away and not used a second time. The cost is very small and the result great, so that one can afford to make up a fresh lead solution each time the prints are to be treated. To make this article complete the method of testing for the presence of hypo is given. This may save the time in looking up a formula, or writing to the editor for the necessary information, and as the cost of the preparation is exceedingly small, a stock solution should be made and kept at all times ready for use.

Standard solution for testing the presence of hyposulphite of soda in photographic prints:

Potassium permanganate . . . . 8 grains
Caustic soda. . . . . 7 grains
Distilled water. . . . . 8 ounces

It is necessary to use distilled water in this case. To test for hypo add three or four drops (not more) of the above to four ounces of distilled water, stir this with a glass rod, then remove one of the prints from the wash water, and allow the water to drip into the pale pink test liquid. If hypo is present the color of the liquid will change to a green tint, but if no hypo is present, the liquid will remain a pale pink color. When the above stock testing solution is made, it will keep in good condition for two or three months. For the sake of satisfaction this testing should be made occasionally, then the operator would *know* that his prints are free from hypo, and that the prints so produced may be regarded as reasonably permanent. Some photographers who are very conscientious about the permanency of the prints send one or two to be tested by a chemist

IMPROVING WORK BY AFTER TREATMENT

BY WILLIAM S. DAVIS

AS it is possible to improve many photographs by after treatment, it is my purpose now to describe some of the most practical methods which the average amateur can successfully use after a little practice. In the majority of cases only a small amount of work is necessary to produce the desired result, but that little is important, since the seemingly small defects, when not removed, often greatly mar an otherwise good piece of work.

Some beginners have trouble when after treatment by chemical means are employed, due to not taking a few simple precautions in previous manipulations, so I would say take reasonable care to *fix* and *wash* negatives well before additional solutions are used—also have clean dishes, preferably of glass or other non-metalic substance, for intensifying and reducing baths. The one exception as to thorough previous washing is when a hypo and ferricyanide reducer is used, since this can be applied when the negative is taken from the fixing solution, but even in this instance it is advisable, especially when an acid fixer is used, to give the negative a slight rinse before using the reducer.

A fact which every beginner should be told is that hypo is easily removed after thorough fixation of the film, whereas if not complete a compound is produced which is very difficult, if not impossible, to remove at all, even by prolonged washing. A good rule is to always leave negatives in the fixing bath at least twice the time taken to dissolve out the unexposed white silver in the coating. Another point which affects the uniform action of solutions is to keep the film side of negatives clean and free from greasy markings due to careless handling.

Now we will take up chemical treatment, it being understood that in all cases where negatives have dried they are to be soaked in clean water for ten to twenty minutes, to soften the film and allow even action of the solution used.

If flat and thin an easy means of strengthening is by bleaching and redevelopment, for which purpose any of the prepared sepiasulphide toners may be used, or the following made up:

NUMBER 1

Water..... 4 ozs.
Potassium *Ferricyanide*.....15 grs.
Potassium Bromide.....15 grs.
Pure aqua ammonia.....2 or 3 drops

Bleach the negative in this until white to the back, wash until any yellow tint is removed, and place in the following until film is thoroughly darkened:

NUMBER 2

Water.....4 ozs.
Sodium *Sulphide*, 20% solution. 1 dr.

Do not confuse the *sulphide* with sodium *sulphite*, which is quite a different substance.

Washing the negative in several changes of water for ten to fifteen minutes completes the operation.

If preferred, a fresh strong devel-

Figure I

Figure II

"IMPROVING WORK BY AFTER TREATMENT"

oper (without bromide) can be used in place of the sulphide solution, with perhaps somewhat greater effect.

While intensification is most useful to improve printing quality and bring out details in cases of under-development, one must not expect it to accomplish the impossible with a badly under-exposed negative, for if the light has not had a chance to impress details upon the film it is quite certain an intensifier cannot make visible what is not there.

Reducers belong in two classes—one, such as the hypo and ferricyanide, increasing contrast somewhat by acting more rapidly upon the thin portions of the image, and ammonium persulphate, which possesses the peculiar property of attacking the strongest parts first.

The first mentioned is made by adding just before use a few drops of a strong solution of potassium ferricyanide (red prussate of potash) to enough ten per cent. solution of plain hypo to make it a light yellow. The amount added regulates the speed of action. This bath is good if negatives are flat and dense or show some surface fog, and as before noted can be used immediately after fixing if desired, but of course a thorough washing must follow, as usual.

The second reducer is prepared by dissolving immediately before using, 6 to 10 grains of ammonium persulphate in each ounce of water, but as there is considerable variation in quality of the commercical article (some samples refuse to act at all)—it will save trouble to purchase this substance as prepared by some reliable maker. I have found the Burroughs Wellcome "Tabloid" form convenient and reliable. In cases of excessive contrast, the persulphate will work a wonderful improvement in printing quality without loss of detail in the thin portions of a negative. When sufficient action has taken place immerse the negative at once in a weak solution of sodium *sulphite* (say a teaspoonful to half a pint of water) for five minutes. This stops further action, after which washing in five or six changes of water finishes the work.

Local treatment by any of the methods mentioned is often a valuable aid in altering certain parts, more especially the reduction of over dense spots, such as a sky which refuses to print with the rest of the scene. Illustrations Nos. 1-2-3 show what can be done in this way. In its original state the negative contained good clouds, but when printed to the correct depth for the landscape, as in No. 1, the sky appeared practically blank paper, while if printing was continued for the clouds the result was that shown in No. 2, but after reducing the sky with ferricyanide the entire negative prints without dodging, as No. 3 indicates.

To apply solutions locally, first soak negative in water, and then remove the surface moisture by dabbing gently with a wad of damp absorbent cotton. Hold plate (if a film support on a piece of glass) with sky slanting down and apply reducer with a piece of cotton, going over surface quickly and as close to sky line as possible. For small spots, say between foliage, use a camels hair brush set in quill (these can be had in different sizes from dealers in art materials under the name of "quill pencils," and only cost a trifle).

If the greater portion shows satis-

Figure IV

factory tone gradation, but a few drops shadows or dark objects print much too strong, these can be retarded by staining with yellow analine dye. The kind used for tinting photos or even the common packets sold for coloring cloth is suitable. Soak the negative well and remove surplus, same as for local reduction; then apply a very weak shade of dye with soft brush. The secret of securing an even tint is to float on as much color as film will absorb—then take up any which remains upon the surface with a bit of blotting paper or damp cotton. Care should be taken to work the color close up to the boundary of the space treated, otherwise such portion will be surrounded in the print by a dark line. Cuts Nos. 3 and 5 are examples of alterations produced by staining and local reduction. In No. 3 it is evident the rocks and portions of distant water are too dark, while the sky is too light to show the surf advantageously, so the sky portion was corrected by local reduction, then a pale shade of dye was used on the distant waves and a stronger tint upon the rocks—the finnished result appearing in No. 5.

Staining is useful also for strengthening flat high lights, and in holding back the distance when it conflicts with the foreground tones.

Another method of altering tonality is by applying powdered black lead to tracing, or other fine grained paper, attached to glass side of negative. The paper is cut a trifle larger than plate, slightly dampened upon a smooth blotter, and negative laid film side up upon it, when a little paste or gum is run around the margins, which are then turned over edges of negative and rubbed down. When dry the paper should be smooth and ready to work upon with pencil and lead applied with a stomp. This is an excellent method

when the negative is used only for contact printing, but as a rule is not satisfactory in case of enlarging, since the grain of the paper will show.

Where delicate working up of fine details is required, the pencil and retouching varnish is most generally employed. A medium of some kind is necessary to make the film take pencil work, a good one being obtained by dissolving about 30 grains of rosin in an ounce of spirits of turpentine, the amount of rosin used regulating the "grain" obtained. A very little medium is rubbed over the film with a piece of lintless cloth, and allowed to stand until hard. Use good pencils of H and HB grade, sharpened to a long fine point. The simplest way to apply the lead is by working with a light stippling motion or cross hatching of short lines until the desired effect is obtained. If the first trial is not productive of satisfactory results all traces of the work can be removed with turpentine and a new start made. If desired the medium can be flowed over the back of negative and that side worked upon instead of the face, and in some instances both sides are treated to permit the application of more lead than one alone will hold.

One more method worth mentioning here is mechanical reduction of dense spots by friction, thus grinding away a portion of the film. To accomplish this draw a soft cloth or piece of chamois over the tip of one finger, dip in a light machine oil or "3 in 1," sprinkle with powdered pumice and gently grind the film (dry of course) with this. A leather stomp may be used for quite small places.

While corrections on the negative saves trouble later in printing, some prefer, when only slight modification is necessary, and but few prints wanted, to do some work upon the prints instead. Quite a bit can be done with the hypo and ferricyanide reduced, used very weak, to clear or emphasize light tones and somewhat soften shadows, the proceeding being the same as for negatives. The amount of alteration possible in the deep shadows is limited, however, because the silver image is of a different tint next the paper from that of the outer layer of film, consequently if reducer is allowed to act too long this will show.

Spotting out black and white prints of semi-matte, matte and rough surface is most conveniently done with a medium soft pencil, taking care not to press too heavily upon the film when using, as that causes the lead to shine where applied. Light toned portions, say a blank sky, can be darkened by rubbing with chamois dipped in powdered black lead (if not otherwise obtainable, this can be made by rubbing a pencil upon fine sand paper) until an even tint is secured.

Sepia toned prints, or others having a glossy surface, should be touched up either with ordinary moist water colors, or regular spotting colors. These are applied with a fine pointed sable brush, keeping the color as dry as it will work in the brush. The same method is generally used for touching out "pin holes" in the film of a negative. When working on glossy paper the colors can be mixed with a little gum water to make them match the surface of the paper better.

Figure III

Figure V

"IMPROVING WORK BY AFTER TREATMENT"

THE PREVENTION AND CURE OF PINHOLES

BY H. CURRIE

MINUTE specks of clear glass on a negative are termed pinholes, although, as a matter of fact, they are not holes, or, at least, are only holes very rarely, and have no connection with pins. In the great majority of cases they will be found, on examination, to consist of places where, although the film of gelatine is continuous, there is no image in it. If a drop of some analine dye solution —red ink will do—is left on the negative for a mniute or two, and it is then thoroughly rinsed and examined through a magnifying glass, it may be seen that there is a stain over the hole itself, showing that there is gelatine there. In some cases there will be no stain, and in these it is evident that the gelatine has gone. It is necessary to differentiate in this way; as the two cases are entirely distinct, and if either source of pinholes becomes troublesome, different preventives must be employed.

Taking the commonest case first, there are two main causes for an absence of image in some spot. Either at the moment of exposure that spot may have been protected from light, and so there may be no developable image there; or at some time or other some chemical has attacked the place and either desensitised the film there, or has destroyed the latent or else the developed image. All of these are cases the amateur may encounter; but the first is most frequently met with.

If there is any dust on the surface of the sensitive layer on plate or film at the moment of exposure, the particles of dust will prevent the light from reaching the plate in those places, and each particle will be represented by a clear spot on the finished negative. Dust at any other stage, except "chemical dust," is not likely to do much harm.

One naturally thinks of dusting the plate as a remedy for the trouble; but there are two difficulties about this. One is that the dusting would have to be done immediately before exposure to make quite sure that it was effective. The other is that glass, celluloid and dry gelatine are easily excited electrically, and a very gentle dusting is quite sufficient to cause them to attract all the dust particles floating in the air in their immediate neighborhood, so that the effect of the dusting is to leave them dustier than before.

We may be quite certain that the coated surface of a plate of any of the standard brands, when we take it out of its packet, is as free from dust as it is humanly possible to make it. Anyone who has had the opportunity of going over a modern plate factory, knows that with perhaps the single exception of the operating theatre at a hospital there is no place where dust is combated so keenly and so successfully. The task before the photographer is still to keep the plate quite as free from dust, at least until after exposure.

A very prolific cause of trouble with

dust in the case of magazine or box cameras, is the shaking the camera receives during a journey. Many users of such instruments must have noticed numerous pinholes on the first plate of the dozen, while the rest were free from the defect. The first plate is exposed to the interior of the camera, as a rule, for a longer time than the rest, often during travel; and so gathers dust. If the subject of the first exposure is an important one, it is well, on this account, to expose the second plate on it also.

In the case of dark slides the same thing may happen, but to a less degree owing to the much smaller space in front of the plate. Dust may get on to the plate with them in another way, however. If the outside of the slide is dusty when it is put into the camera, the act of drawing the shutter may wipe off the dust, which, after floating about in the camera, may settle on the plate. Apparatus which is light tight is generally dust tight also; and any trouble is best combated by keeping the outfit clean.

Chemical dust has already been referred to. Of course, in one sense, all dust is chemical dust: but in the present connection the phrase is used to describe fine particles, generally of photographic materials, which settling on the surface of the plate attack it. Finely powdered developers, hypo, lime from lime washed walls or ceilings, magnesia, a bye-product of the use of flash powder, are some of those most likely to be present. Trouble from this cause is avoided by keeping the floor, shelves, and bench as clean as possible; wiping up any spilt solutions instead of allowing them to dry and cause an actively harmful dust.

Pinholes that are due to any of these causes are best remedied by careful spotting out on the negative; using one of the special pigments sold by photographic dealers for such work, and a fine brush or mapping pen. The brush must be almost dry, or it will put the pigment where it is not required.

The pinholes of the other class, in which there is no gelatine or image, are due to decomposition of the gelatine itself. This is furthered by keeping the film wet for a long time, as when it is put up to dry in a damp place, by a high temperature, but particularly by the use of solutions which attach gelatine. The most frequent case of this kind is that of the pinholes which often appear in negatives intensified with mercury. Mercuric chloride has a powerful action upon gelatine, and should therefore not be applied to a plate or film in too strong a solution, particularly in warm weather. Another precaution which may be taken against any trouble from such a cause as this, is to harden the plate or film by immersing it in a solution of formalin, say one part of formalin to six or eight parts of water, before exposing it to anything likely to attack the gelatine, such as mercuric chloride, ammonium sulphocyanide or sodium sulphide.

Such pinholes are spotted out in the same way as the others, except that in this case it may be necessary to apply a drop of a solution of gelatine to the hole, in the first place, in order to provide something to hold the spotting pigment, since there is nothing there but the bare glass.

The trouble of spotting out pinholes is so great that every care should be taken to avoid the necessity for it. When they are very numerous and very fine, it is best not to attempt to deal with them individually, but to use a rough paper for printing, or else to interpose a sheet of celluloid between the paper and the negative in the printing frame, so that they may be diffused into invisibility. This will often be found quite successful, although the diffusion introduced may not be so great as to make the picture appear noticeably blurred.

Before attempting to spot out pinholes, also, a print should be made, to see to what extent their presence is manifest. It will be found that a great many, although very visible on the negative, will pass quite unnoticed on the print. Some will be on a dark ground, on which they do not show: while others will fall on some quite irregular texture which masks their nature entirely. They may be quite visible, but yet not appear to be defects. A subject as a piece of ruined masonry, such as will often figure in the landscape or view pictures of the amateur, may not show any pinholes, however plentiful they may be. Little spots on the old brick or stone work are there in profusion in any case, and a few more or less are of no importance.

No one who has had to deal with a really bad case, pinholes on a light area of even tint, where every mark shows, is likely to forget either the trouble or the skill which such a task demands. Such a one will no longer have any doubt as to prevention being better than cure; and will take care in future that no reasonable steps have been omitted throughout the proceedings to ensure freedom from these tiny but aggravating annoyances—*Photography.*

AFTER THE STORM *Wm Ludlam, Jr.*

MONOSULPHIDE OF SODIUM AS A TONING AGENT FOR P.O.P.

BY "CHEMIST"

THE toning of photographic prints made upon printing out papers has been known and practiced from the earliest days of photography.

A photographic print made upon printing out paper must be changed in color to make it presentable, because a print made in the usual way, washed, and fixed is disagreeable in color, being in nearly every instance a mixture of yellow and brown, a color that has been very aptly termed a foxy brown, the only exception being where a self-toning paper is used. Even in this case the process of toning is resorted to so that the color of the print is made agreeable to the eye. A secondary chemical is always used either in combination or separately to bring about the change. The salt almost universally employed to bring about a change in the color of the print is terchloride of gold, even in self-toning paper it is this salt that is used to secure the change.

That many beautiful colors can be obtained by the use of this salt in combination with other chemical salts in weak solutions is well known to the practical photographic printer; each printer having some pet formula for toning, one that he is used to, that will enable him to secure uniform and pleasing tones. The salts of platinum too have been and still are used for changing the color of photographic prints, but owing to the present high cost of all the salts of platinum, the use of these for toning purposes has fallen off considerably.

That sulphur in various forms has been used for changing the color of prints made upon printing out papers, is known, such salts as potassium sulphide (liver of sulphur). This latter term was given to this salt by the alchemists who discovered it. Ammonium sulphide also has been used with more or less success. This last chemical is a deep yellow liquid, possessing a most disagreeable odor, and better known perhaps under the name of hydrosulphuret of ammonia. It is largely used by the photo-engraver for blackening the silver image upon wet collodion negatives, and thus give great contrast for line and half-tone negatives. The best sulphur salt that can be employed for the toning of prints made upon either collodion or gelatine coated papers that has been found by the writer is the monosulphide of sodium. The color of the prints that have been toned with this salt correspond with the tones obtained with the terchloride of gold. Specimen prints accompanying this article will bear out this statement. These prints were made upon tropical solio. The peculiar point about this process is that the prints are washed and fixed thoroughly in a plain solution of hyposulphite of soda *before* the toning operation is proceeded with. The depth of printing also must be carried further than is usually done, because, by fixing first, and toning afterwards,

brings about a reduction of the image to a greater extent than when the ordinary process of toning first and fixing afterwards is resorted to. Prepare a number of prints by printing them somewhat dark, wash them well for five minutes, then fix them in a hypo bath made up as follows:

FIXING BATH FOR SULPHUR TONING

Hyposulphite of soda..... 6 oz. av.
Water.....30 fluid ozs.

Place the prints into this bath after washing, fix them for six or seven minutes, then remove them and wash them in four changes of clean cold water. They may then be toned in the following sulphur toning bath:

SULPHUR TONING SOLUTION

Monosulphide of sodium.... 6 grains
Water.....16 fluid ozs.

The sodium salt quickly dissolves in this quantity of water. Place this preparation into a tray, immerse the fixed prints in this, turn them over and over, so that the surface of each print comes into contact with the liquid. Watch the change in color, which must not be carried too far, unless the print was made exceptionally dark, because this solution causes a thinning out of the image if left too long in it. As soon as the desired color has been *nearly* reached, remove the prints, place them into clean water and give them a good washing by changing them from tray to tray of clean water half a dozen times, or, let them wash in a strong running water for a quarter of an hour. As soon as the washing operation is complete, remove the prints and suspend them at one corner with a clean wood-clip and hang up to dry.

The true color will be seen when they become quite dry. In any case the color will be very rich and the prints brilliant. Do not attempt to blot them, and do not place them into an alum bath, because this would set up a very undesirable reaction, not that the print would show any sign of degrading, but there may be formed a compound that would eventually injure the print.

Upon comparing these sulphur toned prints with any prints toned with gold it will be found impossible to distinguish them, except that the sulphur toned prints will show a superiority over the gold toned ones.

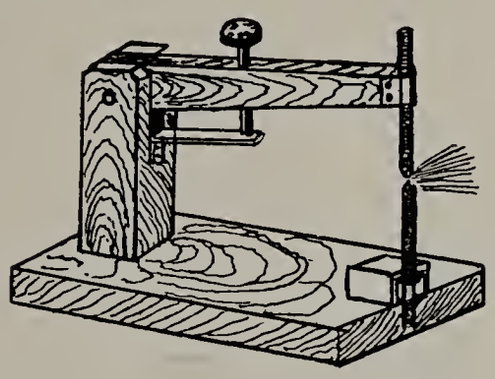
There can be no doubt that a properly toned sulphur print is as permanent as any silver print can be, because the reduced silver or silver oxide formed in the print by the action of light, is fairly well combined with sulphur, forming an organic sulphide of silver, which should aid in securing permanent prints. The combined toning and fixing bath often used to-day, when the toning of a gelatine print is required in a hurry, for press work and for the artist, the toning of the print is due to the presence of sulphur.

It should not be forgotten that where silver is firmly combined with sulphur, that a body is formed that is permanent, namely, a sulphide of silver, for the combination of these two elements has reached the limit of affinity, there being no more of either element left to attract or combine, hence the permanency, or in other words, nothing is left for the other elements to act upon, especially sulphur, therefore there is no further room for change.

A HOME-MADE ARC LAMP

THE photographer has many different uses for a strong and controllable light such as is furnished by an arc lamp, for such processes as enlarging, photographing of interiors, projection of lantern slides and the like. There are many good commercial arc lamps on the market, but in cases where such a lamp will be put to only limited and occasional uses the service obtained is not in proportion to the investment required. An arc lamp consists merely of an arrangement to hold two carbons in the proper position, and a means for making the proper adjustments. A lamp that is very simple and inexpensive can be constructed along the plan shown in the sketch. Such a lamp will give very good service for all photographic uses, and the dimensions can be made according to the space available where the lamp is to be used.

On the base, consisting of a square board, is fastened an upright, which is a square block of wood with a slot cut in the upper part to provide a guide for the upper arm or carbon holder. This arm should fit nicely in the groove, without any appreciable side play. Another block of wood fastened to the opposite end of the baseboard holds the lower carbon. The carbons are clamped to the holders or blocks by means of a piece of tin which is screwed just tight enough to hold the carbons firmly, and still allow them to be pushed up or down. The adjustment of the carbons is provided for by a screw passing through the upper arm or carbon holder, and resting on a little metal bracket. This provides an easy and effective way of bringing the two carbons together to start the arc, and bringing them apart to the proper distance at which the best light is obtained. The electrical connections are made by fastening one wire to each of the tin carbon holders, by inserting under a screw head, or soldering to the tin.



In operating an arc lamp on the 110 volt commercial circuit, some resistance must be placed in the circuit to pass off in the form of heat the current not consumed by the arc lamp. A rheostat can be made by using an earthen jar of water, into which are immersed two strips of tin connected to the two ends of a parted wire. The brilliancy or strength of the light, and the amount of current consumed is regulated by bringing the strips of tin closer together or farther apart in the water. The more water between the two surfaces, the less current is allowed to pass to the lamp.

The best carbons to use for photographic enlarging and lighting purposes are the specially cored carbons,

made to give a clear white light, which is much more actinitic than that given by the carbons ordinarily used for projection purposes. After the light has been started by "striking" the two carbons together, the adjusting screw is turned to bring them apart about ¼ inch, after which no further adjustment is required, except to occasionally feed the carbons together as they burn away. When the lamp is used for lighting objects to be photographed a reflector can readily be mounted behind the carbons to throw the maximum of light on the object being photographed, or more preferably on the diffusing screen which should always be interposed between an arc light and the subject, in order to soften the shadows, which might otherwise be too dense, by reason of the light originating in the form of a point. The arc light is for this same reason the best adapted for use in connection with condensing lenses for enlarging or projection purposes.

THE WOODSMAN'S CHRISTMAS DINNER *R. R. Sallows*

LARGE SCALE NEGATIVES WITH A HAND CAMERA

BY F. C. LAMBERT, M.A., F.R.P.S.

SOONER or later the possessor of a hand camera wishes to photograph some small object such, for instance, as a coin, shell, insect, etc., life size or somewhat larger. He finds that on extending the bellows of his hand camera to their fullest extent he cannot get near enough and at the same time get the object in focus on a sufficiently large enough scale. What is to be done? Here

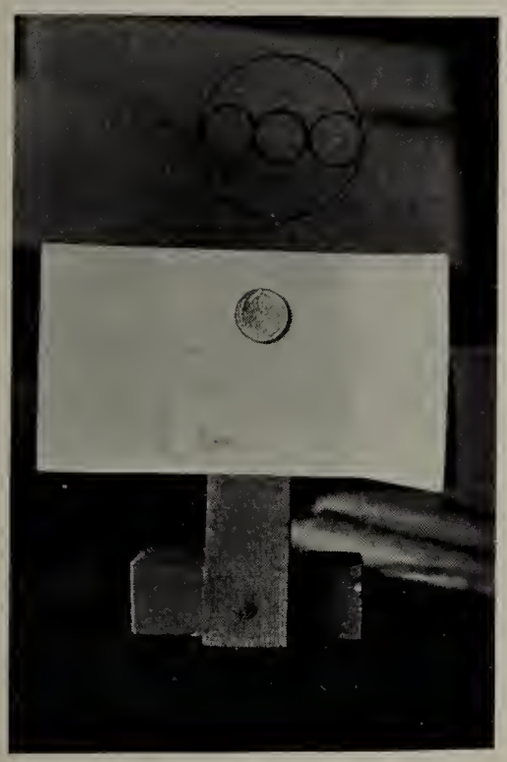


Figure I

before me is a Premo ¼-plate camera which at full bellows extension gives me a plate-to-lens-stop distance of 7 inches. The focal length of the lens is 5¼ inches.

To find the ratio or scale of the largest image thus obtainable we subtract 5¼ from 7 getting 1¾ and divide this into 7, getting 3, *i. e.*, the image is ⅓ natural object size.

In figure 1 is shown a photograph of a three-penny silver piece stuck to a postcard by a dab of sealing wax. In the upper part of this figure we see one (large) circle enclosing three smaller circles arranged with their centers situated along the diameter of the circle and with their circumferences in contact. The size of these smaller circles is that of the coin seen below; while the larger circle is that of a three-penny piece. Thus we see at a glance that our largest obtainable image with this camera and lens is one-third life size as already estimated.

Of course every present day photographer knows that he can buy supplementary lenses (misleadingly called "magnifiers"), which enable him to shorten the working focus of his lens, and so get an enlarged scale of image, but there is the trouble of finding and fitting them, etc. There is also a widespread notion that a special form of lens is required, and that various other difficulties are in the way.

Let any such person take a hint from the very simple home-made contrivance shown in figure 2. On the left we have the pocket Premo with its bellows at maximum extension. On the right we see the object, *i. e.*, three-penny piece fixed to a postcard, in turn fixed to a rough and ready stand or

holder made out of a couple of bits of wood nailed together. In order to make the camera sure and steady on the table it is tied (with a piece of tape) to an old plate box right full of old negatives. Just in front of the

Figure II

camera lens may be seen our commandeered supplementary lens. This is just a cheap rather small hand reading glass (bi-convex) of about 3 inches focal length. The handle end of this reading glass is stuck into a suitable hole in a large cork. A little care is needed to get the center of this and the camera lens just the same height from the table. The two lenses are brought as near together as circumstances permit.

In figure 3 we have the result obtainable by this very primitive arrangement.

Now the original object (3d coin) is just 5/8 inch diameter. Our first obtained image as seen in figure 1 is one-third of this, or 5/24. Our larger image, figure 3, is 1½ inches, *i. e.*, 36/24. For ready comparison we can express the sizes of the larger image the coin and the smaller image in 24ths of an inch, thus, 36/24, 15/24, 5/24. Roughly their relative sizes are 7, 3, 1.

Just a word more as to exposures. Using the same actual stop with two different focal lengths the equivalent exposures are as the image areas, *i. e.*, the *square* of the relative linear size of the images. In this case the second image is roughly 7 times linear that of the first, so that the equivalent exposures will be roughly 50 to 1. This, however, is not to be set down as a cast iron rule. Because when dealing with very near objects other factors come in. But in actual practice for most ordinary conditons it is quite near enough.

Figure III

The foregoing may perhaps serve to convey the hint that a hand camera need not be put "on the shelf" directly the sunny days are over. Much still life work, copying, etc., can be done indoors either by day or artificial light, *e. g.*, magnesium ribbon.

THE LARGEST PHOTOGRAPH IN THE WORLD *A. L. Dahl*

THE LARGEST PHOTOGRAPH IN THE WORLD

THERE has recently been installed in the Southern Pacific Building at the Panama Pacific International Exposition at San Francisco, the largest photograph in the world. It is a panel showing a group of the Big Trees of California, and measures forty feet long by seven feet high. This enlargement of a photo print occupies the upper end of one side of the information bureau of the railroad building and gives a graphic illustration of the wonderful size and beauty of the real Sequoias to be found only in California.

These giant trees, the oldest living things on the earth, are many thousands of years old, and have withstood the ravages of time from a period that extends back to the time of Moses. Fires and lightning and winds have tried to down them, but after each attack they renew their life and stand forth sturdier and grander than before. So tenacious are they that in many cases where all of the tree but one little shoot has been burned or shattered by a bolt of lightning, the tree would cling to life and gradually regain its vitality and strength, and with the progress of years would enclose and reinforce its shattered frame until the scars had entirely disappeared. Even when broken and cast to the ground, the wood resists decay and remains firm and solid through the years. It is the most permanent form of vegetable growth known to man.

CURRENT EVENTS *and* EDITORIAL COMMENT

IT cannot be denied that amateur photography means the spending of money, nor can one say a word against either the amateur or professional who thus seeks to help expenses by either selling his pictures or winning money prizes. The more money spent the better the chances of further advances in apparatus, materials, and craftsmanship generally. But it is a matter of common knowledge that in the history of both art and science the majority of the great advances have been made by workers who never dreamt of money recognition of their work. The conquest of new fields of knowledge or skill was its own reward. A few instances may be quoted of men who have found wealth through their discoveries, but can we say that they would not have followed their chosen paths just the same had this wealth not fallen to them?

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Work as carefully as we may we are not always able to obtain the type of negative which we require. There are some workers who seem to think that an apology should be made for anything in the direction of after-treatment; but when one comes to think of the matter in the light that the negative is only a means to an end intensification, reduction, or any other operation which brings the negative nearer its desired condition is but a part of a chain of operations. Why, then, should there be need for apology at any stage? Mr. H. W. Bennett has given an excellent resumé of several of the more useful and reliable processes of both intensification and reduction, adding a large number of practical tips in connection with each process. His fundamental piece of advice was that the negative be thoroughly fixed. Many workers seemed to think that stains were chiefly attributable to imperfect washing. But be the washing ever so carefully done if this followed imperfect fixing trouble was more than likely to ensue. He strongly advocated an acid fixing bath.

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For a fixing bath add 1 lb. of hypo and 1 oz. of potassium metabisulphite to 64 ozs. of water. This gives us a proportion of one part hypo in five of water. Suppose it takes five minutes for the plate to clear, *i. e.*, lose its milky appearance, then it should remain in the bath at least another five minutes, and preferably longer. Mr. Bennett frequently allows a quarter of an hour in the bath. Another general hint was that it is desirable to use a developer that gives an image as free

from color as possible, as any such color is apt to lead to uncertainty in attaining the desired result. Mr. Bennett entirely taboos what is perhaps the most commonly used intensification method, viz., bleaching with mercury bichloride, followed by darkening with ammonia. He also regards with suspicion all processes involving the employment of mercuric iodide as being open to the charge of impermanence.

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Perhaps the best of these iodide processes is that associated with the name of Lumiere, in which mercuric iodide is dissolved in a solution of soda sulphite. The image becomes of a more or less brown color, which is likely to fade with the lapse of time, but it is useful to know that it can be "restored" by immersing it in any ordinary alkaline developer. Mr. Bennett's favorite mercury process is by the bromide bath. Mercuric chloride 12 grains, and also potassium bromide 12 grains are dissolved in 1 oz. of water. After bleaching, the plate is washed first in plain water, and then in a 1 per cent. solution of hydrochloric acid (several times in each washing stage, of course). The plate is darkened in a normal ortol (or almost any other alkaline developer—pyro not recommended). This process may be repeated several times with a steady gain on each repetition. Mr. Bennett passed round an example of its being repeated five times, by which treatment a thin and ghostly image was brought up to a printing range of contrasts too strong for any ordinary printing process. This drastic treatment had been carried out without inducing any visible stain—a result that bears its tribute both to the process and to Mr. Bennett's careful manipulation.

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As the cromium method of intensification is growing into favor just now, it may be of interest to give Mr. Bennett's formula for comparison with others in vogue. Make a 5 per cent. solution of potassium bichromate, and also a 5 per cent. solution of hydrochloric acid. (These keep practically indefinitely.) To make a bath take 1 oz. of each of the above two solutions, and add 4 ozs. of water. After bleaching, thorough washing follows, of course, and then the plate is darkened by an alkaline developer; Mr. Bennett's choice, as before, again going to ortol. This process may also be repeated if desired. It may be added as a general remark that partial bleaching is not to be recommended. Of necessity it must always be more or less guess work, and lead to uneven results so far as the change of the scale of tones is concerned.

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PRIZES FOR ELEVENTH ANNUAL EXHIBITION OF PHOTOGRAPHS, MARCH 1 TO 17. JOHN WANAMAKER, PHILADELPHIA.

You are invited to send your pictures to the Eleventh Annual Exhibition of Pictorial Photographs, March 1 to 17, 1916, in Philadelphia.

If you have done good work, you will want to show it.

If you have mastered the details of technique of the art of photography and understand composition and the

art of picture making, ideas will come that will clamor for expression.

There will be no need to imitate what some one else has done, or to copy some old painting. Photography has its own way of setting forth the thought. Originality counts for much.

Entries close on February 19th next.

Opportunities are presenting themselves every day. It needs only a little enthusiasm to get started. This exhibition should act as a stimulus.

Both amateurs and professionals may send pictures. Prizes are awarded according to merit, pictorial qualities being preferred to technique.

The judges will decide the merit of each picture as they would in an exhibition of paintings or sculpture. Eighteen prizes will be awarded, and as many ribbons of Honorable Mention as the judges find necessary.

1st Prize	$100.00
2nd Prize	50.00
3rd Prize	25.00
5 Prizes, $10 each	50.00
10 Prizes, $5 each	50.00

To win a prize, a picture must be posed and exposed by the exhibitor, and must be original, not copied. The developing, printing or enlarging may be done by others.

Previous exhibition of pictures in other places will not exclude their entry, but pictures not previously exhibited will be preferred in awarding prizes. Please note that no prizes will be given for pictures shown at any of our own previous exhibitions.

Only one of the first three prizes will be given to any one exhibitor.

Prizes may be withheld, if, in the opinion of the judges, the pictures are not of sufficient merit.

Pictures winning prizes become the property of the Wanamaker Store, with the privilege of reproduction for illustration. Exhibitors who prefer to keep their winning pictures may do so by waiving claim to the money prize.

Pictures may be of any size, from 5 x 7 to 14 x 17 inches. Small pictures should be enlarged to 6½ x 8½ or 8 x 10 inches. They must be mounted, but should not be framed, and should have plainly written on the back, title of the picture, name and address of exhibitor, lens and material used, and other statements of interest, mentioned on the label which our Camera Shop furnishes. In addition to the label, the exhibitor must make a list of his pictures on a card suitable for a card-index catalogue. These cards will be furnished on application.

Exhibitors may enter as many pictures as they wish. The judges may decide not to hang more than ten from any exhibitor. Quality of work will be considered. In case there are more pictures than can be exhibited properly, the judges have authority to decide the arrangement or grouping of the meritorious pictures, and the omission of those of only ordinary value.

Care should be taken in selecting the proper color and size of the mounting card. Often a good picture is spoiled by thoughtless mounting.

All photographs should be carefully wrapped; package plainly addressed, and marked with name and address of the exhibitor; and delivered to the

Camera Shop on or before February 19, 1916.

The express charges, if any, must be paid by the exhibitor.

All reasonable care to prevent loss or damage to pictures will be given, but no responsibility for loss or damage will be assumed.

No picture shall be removed from the walls until the close of the exhibition.

For further information inquire at the Photographic Exhibition Bureau, Main Floor, Juniper Street, John Wanamaker, Philadelphia.

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PHOTOGRAPHS WANTED

The editor of *The National Geographic Magazine* writes that they are interested from time to time in collections of hand-colored photographic prints of scenes in various parts of the world, more particularly of types of people in out-of-the-way places or street scenes in towns and cities. Naturally, they cannot use any lithographic or color print subjects. What they want is actual photographic prints which have been carefully hand-colored or tinted by hand. They wish to reproduce these in *The Geographic Magazine.*

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DWIGHT TRACY, M.D., D.D.S., INVENTOR AND GENEALOGIST, DIES SUDDENLY

Dr. Dwight Tracy, who was 84 on August 24th, died suddenly with heart disease, Sunday evening, October 3rd, about 7 o'clock, at the home of Gerard L. Ranger, 87 Division Street, Norwich, Conn., where he had come but a few minutes before to talk to Mr. Ranger about photography, a subject in which they both were interested.

Dwight Tracy was born in the town of Scotland, Windham County, Conn., on August 24, 1831, and was the son of Thomas Chaplin Tracy, also a native of Scotland, Conn., and Maria Safford, who was born in Canterbury. He was of colonial ancestry, and on his father's side the line ran back to Lieutenant Thomas Tracy, one of the original settlers of Norwich.

At twenty-two years of age Dr. Tracy was graduated in dentistry and one year later, in 1854, he obtained his medical degree. In 1857 he married Jane Vanderbilt Fry of Plainfield, Conn., who died in Arlington, Mass., in 1907. She was the daughter of William Congdon Fry and Mary Wilcox Cross. Having served a long apprenticeship with one of the best dentists of that day, Dr. Oliver F. Harris, of Worcester, Mass., the young graduate showed marked ability for the mechanical and artistic part of his professional work. Being an inventive genius, however, he pursued the practice of dentistry for six or seven years only, after which he devoted himself to various inventions having several patents issued to him between 1860 and 1889.

The first of his inventions was a perfected domestic sewing machine, but owing to the cost of manufacture it was not a commercial success. The next effort was more successful, being a machine which would take a bolt of linen, which, as it passed through, was cut and pleated and stitched into a complete shirt bosom, ready to insert

into the garment. This was the first machine of the kind ever used and revolutionized the shirt making industry of those early days, yielding a handsome return to the inventor. The business grew to large proportions and was, after a few years, sold, at which time Dr. Tracy made large investments in New Jersey real estate. These investments came to grief in the panic of 1873, when the scourge of Black Friday fell so heavily upon the money market.

The next invention was a safety railroad switch, the first safety device of its kind ever used, and at one time was installed in large numbers on most all the railroads in this country. He also patented a railroad frog and a crossing. This was followed some years later by a wire drawing machine designed to draw a large number of wires of varying sizes at one time, and a friction car starter for use on horse drawn street cars to avoid the jerk upon the passengers and horses. He also prepared extensive mathematical tables.

Dr. Tracy made genealogy a special study. He was well known in New England and had correspondents throughout the country and abroad.

When Norwich observed Benefactor's Day, Sunday, June 7th, 1914, he was an active worker among the committees and it was at his suggestion that Saturday, June 6th, was observed as Founders' Day, the date of the 225th anniversary of the founding of Norwich.

While genealogy had absorbed most of his time for the past twenty years Dr. Tracy had for the last five years taken a lively interest in photography, desiring to become proficient in order that he might obtain pictures of old houses, monuments and other objects of historical interest. That he had made splendid progress in this line of work is evidenced by the fact that he had gained favorable mention for his portrait photographs which were shown at photographic exhibitions, and that he had received a second prize for a portrait entered in a competition conducted by a current photographic magazine.

The fact that a man eighty years of age should care to begin the study of photography at that time of life, casts an interesting sidelight on his personality.

With the advent of the aeroplane he became greatly interested in its tremendous possibilities and began working on the design of a light and powerful motor and of a stabilizer. He was still working on these designs when he died.

Last August he applied for a patent on a certain photographic process which he had evolved, and this episode in his life goes to show how persistent was his tendency to invent.

He was an inveterate reader and was well posted on many lines of thought.

Dr. Tracy was a member of the New England Historic Genealogical Society, New York Genealogical and Biographical Society, Connecticut Historical Society, New London County (Conn.) Historical Society, The Founders of Norwich Connecticut Society, Connecticut Society Sons American Revolution, Founders and

Patriots Society, Newport Historical Society, Aeronautical Society, New York, Twilight Club, New York, Photographers Association of New England.

He is survived by his daughter, Mrs. Edgar E. Fay, of Chestnut Hill, Mass.; and three sons, Dwight Carlton Tracy, of New York City; Laurence Ward Tracy, of Chestnut Hill, Mass.; William Dwight Tracy, of New York City.

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BAUSCH & LOMB AWARDS AT PANAMA EXPOSITION

The record made by the Bausch & Lomb Optical Co. at the Panama-Pacific Exposition is one that is probably unequaled by any other exhibitor at San Francisco. The awards granted aggregate four Grand Prix or highest possible awards, one Medal of Honor and one Gold Medal. The award in each case was the highest prize granted. There is good reason to believe that no one company in any other department of the great exposition received such high honors as did Bausch & Lomb. In fact the company's representative at the fair writes that the other exhibitors regardless of their product or how they were grouped only received one Grand Prix and in most cases only a Gold Medal.

The four classes in whch Bausch & Lomb Optical Co. received the Grand Prix are Optical Instruments, Balopticons, Engineering Instruments and Range Finders. The first division called Optical Instruments, is comprised of seven classes and covers the company's Opthalmic Lenses, microscopes, parabolic and Mangin mirrors, field glasses, microtomes, and magnifiers.

Bausch & Lomb-Zeiss photographic lenses were awarded the Gold Medal, which was the highest award given. It is generally understood that no Grand Prize was awarded on account of the war in Europe, which prevented all foreign exhibitors from entering and thereby reduced competition.

The following are the most striking points covered in the Questionnaire upon which the Gold Medal was granted:

"The Ic Tessar, F:4.5, has a greater covering power in proportion to its focal length than any other F:4.5 speed anastigmat which is offered in any market.

"The VIIa Protar, is composed of two single lenses, each corrected to the highest degree. When used alone the Series VII lenses are so remarkably corrected that they do not have to be stopppd down to very small stops in order to obtain covering power. Hence, it is possible to make up sets of Protar lenses of the highest excellence, all fitting the same barrel or shutter, and giving a variety of focal lengths."

The superior quality of all Bausch & Lomb optical instruments is generally recognized. Their microscopes are found in the laboratories, schools and colleges throughout the country. Magnifiers of this make have been in use for sixty years, while it was this company who introduced in this country the stereoscopic prism field glass, a type that is now universally adopted for the better quality glasses.

Another Grand Prize was awarded the Balopticons, as the projection apparatus of Bausch & Lomb manufacture is called. Besides simple stereopticons for lantern slide projection, the Balopticons include instruments which project opaque objects direct, that is, solid objects or actual photographs, pictures, etc., without the necessity of making lantern slides. These instruments also project on the screen objects as seen through the microscope and include every other device known in optical projection.

The Photomicrographic Apparatus of Bausch & Lomb make has been granted the Medal of Honor. This apparatus consists of a special camera with appliances for using it in connection with a microscope to make photographs of specimens as seen in the microscope. Considerable accuracy and rigidity are required in the mechanical parts and high quality in the optics—for the image as received on the photographic plate is magnified a thousand or more times and the slightest tremor of the apparatus or other defect would result in a failure.

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WITH THE CAMERA

NOTES FROM THE ILLINOIS COLLEGE OF PHOTOGRAPHY AND THE BISSELL COLLEGE OF PHOTO-ENGRAVING, EFFINGHAM, ILL.

Some time ago, the papers all over the country, told of a counterfeit money passer being caught in Pittsburgh. He had passed, and had in his possession, over $100,000, having traveled all over the country during the last few years. It developed that he was a former student of the B. C. P. and that a combination of plotters had sent him to the college with the specific purpose of learning photo-engraving, so that he could afterwards make the plates. In an indirect way, it shows the thoroughness of the instruction given at the colleges when a three or four months' student can make plates so perfect, that the product can be passed for over two years without being stopped.

Prof. D. J. Cook, Superintendent of the Bissell Colleges, who is Worshipful Master of the Effingham Lodge, A. F. & A M., was in attendance at the meeting of the Grand Lodge in Chicago, as a representative of the local chapter.

At a recent meeting of the College Camera Club, the following students were elected officers for the next term: President, T. Henderson; vice-president, J. H. Quinn; secretary, C. W. Anderson; treasurer, R. K. Wilmarth; corresponding secretary, L. T. Walter.

Mr. Felix Raymer, of Austin, Texas, formerly Superintendent of the Bissell Colleges, has been elected secretary of the Professional Photographers Association of Texas. Mr. Raymer is great, both in size and enthusiasm, and will make a very capable officer for the association.

Mr. Jos. R. Bull, who has been in Waukegan, Ill., conducting a studio, has gone to Pittsburgh, Pa., where he is now engaged in home portrait work.

Prof. C. W. Dishinger, of the Printing and Finishing Department, spent a day in St. Louis recently, and while there called at the Conklin Studio, where H. G. Salzgeber, of '15,

has charge of the developing and printing.

In the last monthly competition of the College Camera Club, E. V. Reyes, of Huacho, Peru, S. A., was the winner of the first prize.

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ELEMENTARY PHOTOMICROGRAPHY, BY ALFRED BAGSHAW

The beginner in photomicrography will assuredly welcome the revised edition of the above book, the text of which has been brought thoroughly up-to-date and new illustrations added. Mr. Bagshaw has devoted himself to the task of educating the amateur in the art of taking photographs through a microscope by means of helpful and concise instructions, which involve no expensive apparatus or appliances, and which are given in such a practical and lucid manner that they can be readily followed by anyone who possesses a camera and a microscope. The book includes chapters on the microscope and accessories, multiple color illumination, fine focusing with high powers, instantaneous exposure, color photography, negative enlarging, etc., etc., which are liberally illustrated. The book can be obtained from all booksellers, or direct from the publishers, Iliffe & Sons, Ltd., 20, Tudor Street, London, E. C., price 75 cents.

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NEW PRESIDENT'S MESSAGE

To the Photographers of America, Greetings:

In assuming the office of president of the Photographers Association of America, I extend greetings and hope for a speedy return of business conditions that will bring a period of prosperity to photographers such as they have never experienced before.

Members of our association have noticed that the P. A. of A. has taken on new life and we are doing things. We are not only holding a convention each year, but we are, through the efforts of our secretary, beginning to be of real service to members of the profession every day in the year.

The policy of the new administration is to not only continue the progressive work already begun, but we propose to inaugurate some new measures which we hope will place American photography on a higher plane than it has yet attained. The Code of Ethics adopted by the P. A. of A. at Indianapolis and by most of the sectional conventions held since, if lived up to, will do more to elevate photographers in the eyes of the public than anything heretofore suggested. We must go a step farther and insist that our members are ethical in fact as well as promise.

We hope to have for the consideration of congress at Cleveland other matters that will be of vital interest to every man and every woman engaged in photography and if received favorably by our legislative body, each member of our association will be given the opportunity of putting himself alongside other professional men and his business will be regarded as honorable and as legitimate as any other profession. Why should it not be?

The keynote of the 1916 convention will be getting more business for the photographer. While we expect to have the usual art instruction, the

strong features of the convention will be to show photographers how to increase their business and how to make a financial success of it. We hope to make a part of our program especially attractive to the man who has not yet arrived—to "the comer." Some of our programs in the past have shot over the heads of many of our members.

It is too early to give out much concerning the program. I have but outlined what we have in mind for 1916. We ask that the photographers of America interest themselves enough in what we are trying to do to take out a membership in the P. A. of A. It costs but a little over a half cent per day, and if 5,000 photographers will support us to the extent of a membership, I assure you that your Executive Board will accomplish things worth while.

We will welcome suggestions tending toward making either the association or the convention of greater service and help to our membership.

Fraternally yours,

L. A. DOZER.

Bucyrus, Ohio, October 1, 1915.

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WHAT IS THE VALUE OF THE CYKO TRADEMARK?

Through the photographic journals and their own publications, *Portrait* and *The Ansco Dealer,* Ansco Company recently offered a reward of $100 for the best answer submitted to the question, "What is the Value of the Cyko trademark to the manufacturer?"

The contest will close December 31, 1915, and all answers received up to and including that date will be considered in the competition. There are no other rules in the contest. All answers submitted, of whatever length, style or form, will receive equal consideration by the judges who will award the prize to the person whose contribution best answers the query.

WHEN HIS SHIP COMES IN — *R. B. M. Taylor*

The Photographic Times

With Which is Combined

The American Photographer and Anthony's Photographic Bulletin

Classified Advertisements

Advertisements for insertion under this heading will be charged for at the rate of 25 cents a line, about 8 words to the line. Cash must accompany copy in all cases. Copy for advertisements must be received at office two weeks in advance of the day of publication, which is the first of each month. Advertisers receive a copy of the journal free to certify the correctness of the insertion.

RATES FOR DISPLAY ADVERTISING SENT ON APPLICATION

THE PHOTOGRAPHIC TIMES PUBLISHING ASSOCIATION,
135 West 14th Street, New York.

Learn a Paying Profession

that assures you a good income and position for life. For 20 years we have successfully taught

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967 Wabash Avenue, Effingham, Illinois

SEND US the names of your friends who are interested in photography—we want to send them a sample copy of THE PHOTOGRAPHIC TIMES.

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PRACTICAL PHOTOGRAPHY

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EACH book contains 72 pages of carefully written matter, with all that any photographer needs to know on the subject specified by its title. Everything is carefully explained, yet told as concisely as possible.

The make-up is plain and inexpensive, yet neat and attractive. We are not spending a cent more than is necessary on illustrations, but are putting all the value that is possible into the amount of reading matter.

If your regular photographic dealer does not keep these, send us 25 cents for a paper copy or 50 cents for one bound in cloth, and we will send you any number prepaid.

Now ready. No. 1, 'The Secret of Exposure"; No. 2, "Beginners' Troubles"; No. 3, "How to Choose and Use a Lens"; No. 4, "How to Make Prints in Color."

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The Kodak Film Tank.

To loosely paraphrase a sage remark credited at various times to Abraham Lincoln, Benjamin Franklin, and Phineas Barnum—"Some amateurs can get good results with tray development all the time, and all amateurs can some of the time, but all the amateurs can't work tray development most successfully all the time."

The big reason why tray development is much less successful for the amateur than development with the Kodak Film Tank is first because of the fact that tank development is best anyway and second because he *is* an amateur. To develop films by the tray method takes experience. The burden of the work is thrown on the amateur. He must know just what to do and just when to do it—and he can't follow any hard and fast rule. He must follow his best judgment and until he has had plenty of experience, his judgment is *not* best.

With the Kodak Film Tank, on the other hand, the burden of the work doesn't rest with the amateur at all but with the apparatus itself. Here the amateur can follow hard and fast rules. His developing solution is mixed according to a definite formula—the result of years of careful experimenting by experts. His films are developed a certain length of time at a certain temperature. All guess work is eliminated. The amateur may have little or no experience, himself, but the possession of the Kodak Film Tank gives him its equivalent. A great time saver, this Kodak Film Tank. It saves its owner a quarter century or so of experience.

Another reason for the superiority of the Kodak Film Tank is the absence of light-fog in the negatives developed by it. There are few dark-rooms that are really light-proof. Most amateur dark-rooms are mere make-shifts, anyway, and these certainly are not light-proof. The light *will* creep in and while it may not be visible to the eye its presence is shown on the fogged film. The Kodak Film Tank is light-tight — *absolutely.* Against its metal surface the most persistent light ray gives up in despair. With the film safely inside and the tank cover snugly in place, the film is *safe*—there is no question about that. Compare a product of the tray with a negative developed in the Kodak Film Tank. The latter will have a snap, a

brilliancy compared with which the tray developed negative seems lifeless. And the contributing cause is the fact that tray developed film is more or less fogged.

The convenience is the most obvious advantage of the Kodak Film Tank, although, to the practical amateur, the fact that it will yield him better negatives is of most importance. However, there are few amateurs who will miss the stuffy dark-room, for with the Kodak Film Tank you can develop your films anywhere, anytime—in broad daylight if you will. And then its manipulation presents a happy contrast to the awkwardness of tray development. The film is placed on a reel in the winding box where it is wound in combination with a light-proof apron. Protected by this apron it may be safely removed and lowered in the solution cup to remain for twenty minutes. It is then ready for the fixing bath.

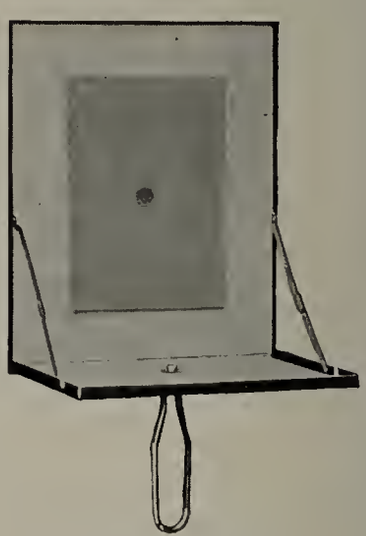
THE PRICE.

Brownie Kodak Film Tank, for use with No. 1, No. 2 and No. 2 Folding Pocket Brownie cartridges, complete,	$2.50
Vest Pocket Kodak Film Tank, for Vest Pocket cartridges, complete, - -	2.50
2½-inch Kodak Film Tank, for use with all Kodak or Brownie cartridges having a film width of 2½ inches or less, complete, - - - - - - -	3.50
3½-inch Kodak Film Tank, for use with all Kodak and Brownie cartridges having a film width of 3½ inches or less, complete, - - - - - - -	5.00
5-inch Kodak Film Tank, for use with all Kodak and Brownie cartridges having a film width of 5 inches or less, complete, - - - - - - -	6.00
7-inch Kodak Film Tank, for use with No. 5 Cartridge Kodak or shorter film cartridges, complete, - - - -	7.50

"THERE'S FUN IN FLASH LIGHTS"

You will find flash light material in two places—at your Kodak dealer's and at your home. At your dealer's you will find the material with which to make the pictures, at your home, material—and plenty of it—*for* pictures, the very best kind of pictures. Fireside pictures, pictures of father lost in the war news, of grandmother knitting, of the children poring over long division or geography, or of their younger brothers and sisters well over the border of slumber land, impromptu portraits, pictures that will naturally suggest themselves at the formal or informal evening gathering — the possibilities for flash light pictures are unending.

You will find that flash light work is as simple as it is interesting. Eastman Flash Sheets burn with a broad, soft light and their successful use offers no difficulties even to the beginner while the Kodak Flash Sheet Holder provides a most satisfactory method for holding the sheets and directing the illumination. In fact, unlike daylight work, Eastman Flash Sheets used in connection with the Kodak Flash Sheet Holder, give a source of photographic lighting over which the amateur has absolute control. He may have his lighting where he will.



Kodak Flash Sheet Holder.

A good share of our winter fun takes place in the evening and so it naturally follows that many a story-telling picture can only be secured through artificial illumination—and it can only be adequately secured through the agency of Eastman Flash Sheets.

The price of the Kodak Flash Sheet Holder is one dollar.

Have you read the free booklet, "By Flashlight"? Your dealer has it or we would be glad to send it to you.

Eastman Kodak Company

ROCHESTER, N. Y., *The Kodak City.*

THE POCKETFOTO

"How did the pictures come out?"
"Fine."
"Well, let's see them?"
"They're home."

This conversation may have a familiar ring to you. It probably has unless you have profited by experience and supplied yourself with a Pocketfoto. You don't want to lug your album around nor do you care to entrust your prints to the tender mercies of the ordinary envelope.

The Pocketfoto is a soft, grain leather case which will accommodate more loose prints than you will ever want to carry—some fifty odd, In size, shape and general appearance, it resembles a pocket bill case and slips in the pocket just as conveniently. Carried in this handy receptacle, your prints will remain fresh and untorn for an indefinite period and its possession enables you to anticipate the wishes of your friends who may be as interested in your pictures as you, yourself.

THE PRICE.

No. 1, for 2¼ x 3¼ or smaller pictures, each, - - - - - - - -	$1.25
No. 3, for 2½ x 4¼ to 3¼ x 4¼ pictures, each, - - - - - - - -	1.50
No. 3A, for 3¼ x 5½ or smaller pictures, each, - - - - - - - -	1.75

KODAK DRY MOUNTING TISSUE

Ordinary paste sticks to everything and anything it touches whether it be print, mount or your fingers. At best paste is bound to be more or less mussy. Here lies one difference between paste and Kodak Dry Mounting Tissue which looks and feels and to all appearances *is* simply tissue paper and may be handled as such. Its adhesive qualities are not brought out till a hot iron is applied—it only sticks where and when you want it to.

And the adhesive qualities of Kodak Dry Mounting Tissue for photographic purposes are well nigh perfect. The print and mount lie in even and permanent contact and there can be no cockling or curling on even the thinnest mount. This makes it particularly valuable as a medium for mounting prints in an album.

PRICE.

Size, 3½ x 3½, 3 dozen . . .	$0.08
Size, 3¼ x 4¼, 3 dozen . . .	.08
Size, 3¼ x 5½, 2 dozen . . .	.08
Size, 4 x 5, 2 dozen . . .	.08
Size, 4¼ x 6½, 1 dozen . . .	.08
Size, 5 x 7, 1 dozen . . .	.08

No photographic equipment is complete without a

Vest Pocket Autographic Kodak

So small and compact that it fits pocket or hand-bag, the V. P. K. may always be carried where a larger Kodak might be an inconvenience.

So mechanically and photographically *right*, that good results follow as a matter of course.

Your dealer has the Vest Pocket Autographic Kodak at $6.00 or with anastigmat lens at $10.00.

As a gift to please the feminine fancy, the Vest Pocket Autographic Kodak with anastigmat lens in an Imported Satin Finish Leather Case, the whole being enclosed in a dainty silk-lined container, could hardly be improved upon. This smart little outfit is priced at $12.00.

EASTMAN KODAK COMPANY
ROCHESTER, N. Y.

THE PHOTOGRAPHIC TIMES
PRINT COMPETITION

ON account of the continued success of the Revived Print Competition, the Editorial Management of THE PHOTOGRAPHIC TIMES will continue these pictorial contests until further notice.

The next contest will be closed December 30th, 1915, so as to be announced in the February Number with reproductions of the prize winners and other notable pictures of the contest. The prizes and conditions will be the same as heretofore, as follows:

First Prize, $10.00 Second Prize, $5.00 Third Prize, $3.00

And three honorable mention awards of a year's subscription to THE PHOTOGRAPHIC TIMES.

In addition to which those prints which deserve it, will be Highly Commended.

CONDITIONS:

The competition is open freely to all who may desire to compete, without charge or consideration of any kind. The subject for this competition is "Flashlights," indoors or out.

Prints in any medium, mounted or unmounted, may be entered. As awards are, however, partly determined on possibilities of reproducing nicely, it is best to mount prints and use P. O. P., or developing paper with a glossy surface. Put the name and address on the back of each print.

Send particulars of conditions under which pictures were taken, separately by mail, also marking data on back of each print or mount. Data required in this connection: light, length of exposure, hour of day, season and stop used. Also material employed as plate, lens, developer, mount and method of printing.

NO PRINT WILL BE ELIGIBLE THAT HAS EVER APPEARED IN ANY OTHER AMERICAN PUBLICATION.

All prints become the property of this publication, to be used in THE PHOTOGRAPHIC TIMES, as required, to be reproduced either in our regular pages or criticism department; credit will, of course, be given, if so used; those not used will be distributed, pro rata, among the hospitals of New York, after a sufficient quantity has been accumulated.

We reserve the right to reject all prints not up to the usual standard required for reproduction in our magazine.

Foreign contestants should place only two photos in a package, otherwise they are subject to customs duties, and will not be accepted.

All prints should be addressed to "THE JUDGES OF THE PHOTOGRAPHIC TIMES PRIZE PRINT CONTEST, 135 West 14th Street, New York, N. Y.," and must be received by us not later than December 30th.

THE "PHOTOGRAPHIC TIMES" ALBUMS

FOR UNMOUNTED PHOTOGRAPHS

THESE ALBUMS for Unmounted Photographs are made precisely like the old-fashioned scrap book, with a guard between every leaf. The leaves themselves are made of a gray linen-finished cover paper, extra heavy stock, (weighing 120 pounds to the ream.) The books are bound in Leather backs and corners, with strong Cloth sides. The word *Photographs* is stamped in gold on the sides. These Albums are sewed in the regular bookbinders' style, to open flat, and they are made to stand the hardest kind of wear. We are putting them out over the reputation of the "Photographic Times," and

WE GUARANTEE EVERY BOOK

These Albums contain fifty leaves each, for holding from one hundred to two hundred unmounted photographs, according to the size of the prints. The prices and sizes of these Albums for Photographs are as follows:

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No. 5.	Size of leaf, 11 x 14	" - -	"	"	2.80

When ordered to be sent by mail, send 15c. extra for postage for any size up to 8 x 10, and 20c. for the two largest sizes

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Each Album is put up in a strong pasteboard box wrapped inside and out

NOTE:—Sizes No. 1 and 2 will be discontinued when our present stock is exhausted, order now.

The Photographic Times Publishing Association, 135 W. 14th Street, New York

THE Photographic TIMES

With which is combined

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AN ILLUSTRATED MONTHLY MAGAZINE
DEVOTED TO THE INTERESTS OF

Artistic and Scientific Photography

EDITED BY

W. I. LINCOLN ADAMS

WILSON I. ADAMS
ASSOCIATE EDITOR

Vol. XLVII.—1915

THE PHOTOGRAPHIC TIMES PUBLISHING ASSOCIATION

NEW YORK

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Photo by Mrs. E. G. Scott

Do You Get What You Want?

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Has the marvelous speed and the great light transmitting power that make indoor photography and exposures on dull days simple and certain.

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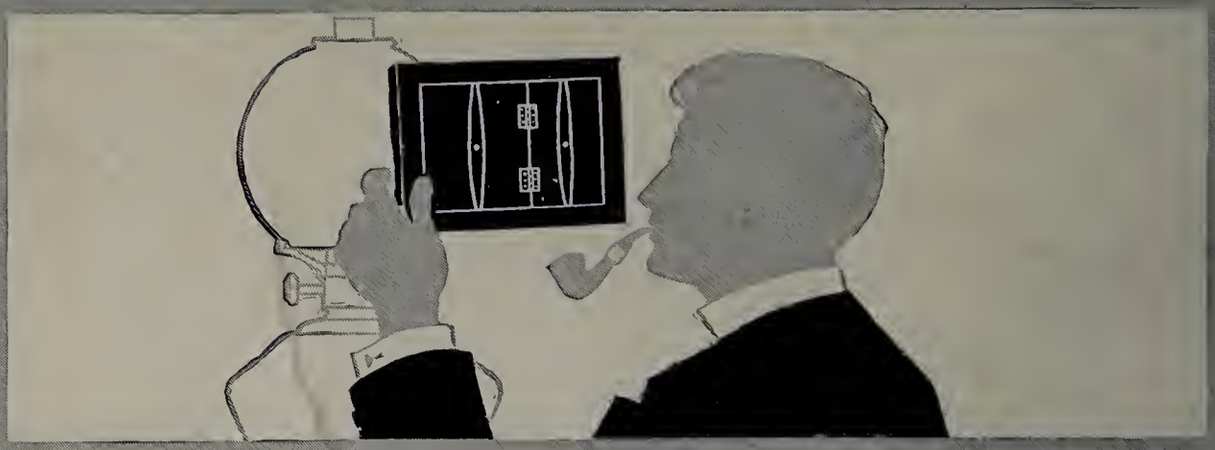

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To your friend who wants a solution of his printing troubles.

Say "Velox" *always* because it is the one paper that best answers every amateur requirement.

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